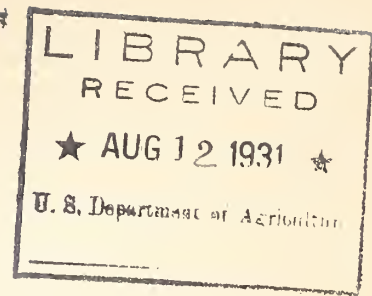


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1.9
Pearl
N.H.



BLISTER RUST AND WHITE PINE
DEMONSTRATION AREAS

NEW HAMPSHIRE

BLISTER RUST AND WHITE PINE
DEMONSTRATION AREAS

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BLISTER RUST AND WHITE PINE
DEMONSTRATION AREAS

(Data as of January, 1928)

NEW HAMPSHIRE

1. EFFECT OF BLISTER RUST ON WHITE PINE

Belknap County

(a) Barnstead. Cut-over area owned by John Emerson near Alton line. Reproduction quite heavily infected.

(c) Meredith. Branch infections located on estate of Col Cummings Meredith Neck Road.

See W. J. Cullen, Laconia.

Coccs County

(b) Whitefield. Pinkham Lot - 60 acres. Heavily infected. Infection dates back to 1914. Most infection 1914-1918. All trees infected except reproduction. Infection came from Ribes cynosbati and Ribes glandulosum along fence row and in lot. Eradicated in 1927. Situated on D.W. highway, about one-half mile out of the town on way to Lancaster and across road from Spauldings.

See T. L. Kane, Woodsville.

Carroll County

(b) Freedom. Rogers Lot - 20 acres. White pine 10 to 30 feet high. Generally infected, some sections as high as 75% but averaging over 25%. The Ribes were removed in 1923 and no new infection has been found since. The oldest canker was 1916. A detailed study has been made of the area. In 1926 the infected trees were cut out and all infected limbs were cut off. Some 569 trees were cut down having trunk infections. They varied from 2 to 12 inches in diameter.

(a) Moultonboro. Severence Lot - five acres. Young pine 2 to 4 feet tall dead and dying around large gooseberry bushes as a center. Ribes could be located by the spots of infected trees. Many young trees dead and more will die as the bushes were just removed in 1927.

(b) Sandwich. McCluskey Lot - 10 acres. Young pines coming in naturally after a clear cutting are being rapidly killed by blister rust. Discovered by scouting in 1926. Ribes have not been removed.

(b) Sandwich. Thompson Lot - Located on the south side of Peaked Mountain. 25 acres of pine heavily infected, dead and dying trees in evidence. Area located in 1927. Ribes removed at that time. They were large gooseberry bushes, cynosbati, growing among pasture pine. There is no infection of mature trees worth mentioning.

See S. H. Boomer, North Conway.

Grafton County

(c) Bethlehem. Beck Lot - 30 acres. Heavily infected. Infection dates back to 1909. Most infection from 1909-1916. This is an even aged stand. Ribes cynosbati and Ribes lacustre were very abundant in this lot and surrounding it. Eradicated in 1923. No new infection since. Located on Beck estate in Bethlehem, adjoining Glessners and on road to Franconia.

See T. L. Kane, Woodsville.

a = Reproduction

b = Medium aged pine.

c = Mature pine.

1. EFFECT OF BLISTER RUST ON WHITE PINEGrafton County

(a) Canaan Center. Wolfson Lot - 4 acres of pine under 15 years badly infected. Not yet eradicated. No figures. Some trees tagged along roadside. See Geo. Eggleston at store and P.O., Canaan Center for exact location.

(a) Franconia. James Lot - About two acres of reproduction. Heavily infected, most infection dates to 1920-1921 caused by Ribes cynosbati along fence row. Ribes destroyed in 1926. Lot situated at junction of D.W. highway and Profile Road.

(b) Franconia. Nelson Lot - 60 acres. Heavily infected. Dead and dying trees conspicuous. Infection dates back to 1912. Most infection from 1912-1916. This is an even-aged stand. Infection caused by Ribes cynosbati and Ribes glandulosum scattered through the lot. Eradicated in 1923 - no new infections since. Lot located at end of Nelson road leading off D. W. highway, about two miles from village. See T. L. Kane

(a) Hanover. Mt. Support Lot, near Lebanon - Hanover town line. Heavy infection on cut-over area of 3 or 4 acres. No figures or detail data on same. Eradicated in 1927.

(b) Hanover Center. Fred Arthur Swamp area or lot. Heavy infection. No detail figures or data. Partly eradicated. See A. B. Elder, Hanover Center for facts and location. Mostly gooseberries caused this infection. See G. F. Richardson, Lebanon.

(c) Haverhill. French Lot - 50 acres. About twenty percent infected. Age of oldest infection not known. Most infection from 1914-1918. Even-aged stand. Eradicated in 1923. No new infection since. Ribes cynosbati were found in this stand and along fence row but not in abundance, about fifteen to the acre. Situated in No. Haverhill on first road after passing "GraysPines" going south out of Woodsville. It is first lot that runs close to this road. Inquire for Mr. Daniels.

See T. L. Kane, Woodsville.

(b) Landaff. Stevens Lot - 45 acres. Heavily infected. Infection dates back to 1914. Most infection from 1914-1918. All ages of trees infected. Large specimens of Ribes cynosbati are found throughout the lot. Has never been eradicated. Lot is situated on Stevens private road, leading off main road from Lisbon to Landaff.

(b) Lisbon. Kay Lot - about 40 acres. Very heavily infected. Considered the worst in county. Infection dates back to 1906. Dead and dying trees conspicuous. All ages of trees infected and all ages of infection. Most infection 1909-1916-- caused by Ribes cynosbati and Ribes glandulosum along fence rows and throughout lot. This lot shows a heavy loss from infection and owner has cut down about twenty per cent of infected trees. Ribes destroyed in 1927. Lot situated across from Barrett Station in North Lisbon on Dartmouth College highway.

See T. L. Kane, Woodsville.

- a = Reproduction.
- b = Medium aged pine
- c = Mature pine.

1. EFFECT OF BLISTER RUST ON WHITE PINE.Grafton County

(a) Lisbon. Moulton Lot - 25 acres. Heavily infected and all infections are close to top of trees so it is difficult to determine exact age, but judging from infection of other trees across fence and the fact that these are stem cankers, feel that infection would date back to 1909. Infection caused by Ribes cynosbati which are abundant for miles in this neighborhood. Eradicated in 1927. Situated on D. C. highway, adjoining Kay lot.

(b) Littleton. Adams Lot - 20 acres of reproduction, thirty per cent infected - dead and dying trees - oldest canker 1914 - most infection 1914-15 caused by Ribes cynosbati and Ribes lacustre in lot and across road from lot. Ribes destroyed in 1918 will be re-eradicated in 1928. Some new infections have come in. Lot is out of Littleton about two miles on the Patridge Pond road.

(b) Littleton. Farr Lot - 20 acres. Heavily infected. Infection dates back to 1909. Dead and dying trees conspicuous. All ages of trees infected. Most infection 1912-1916, caused by Ribes lacustre and Ribes cynosbati along walls and in lot. Ribes destroyed in 1921 - no new infections since. Situated on Farr hill road about one mile out of Littleton going toward St. Johnsbury, Vt.

(b) Littleton. Merrill Lot - 25 acres. Heavily infected. Dead and dying trees conspicuous. Infection dates back to 1909 - most infection 1912-1916. All ages of trees infected. Infection caused by Ribes cynosbati growing in pasture. Eradicated in 1918 - no new infection since. Lot situated on D. C. highway about a mile from Lisbon-Littleton town line. There are two other lots in Littleton on Mann hill about a mile up from the village that have considerable infection on mature trees. These lots are easily accessible and show infection on all ages of trees.

(b,c) Quintown, Orford. Keynon Lot. No figures or details. Heavy infection on lot. See Walter Keynon, at garage in Fairlee for location, etc.

(b) Monroe. Smith lot - 60 acres. Heavily infected. Infection dates back to 1912. Most infection from 1912-1916. All ages of trees infected. Ribes cynosbati and Ribes glandulosum were plentiful throughout the lot. Eradicated in 1924. No new infections since. Situated in North Monroe. Inquire for Homer Smith.

(b) State road Hanover to Lyme. Morrill Lot. Town of Lyme 70 per cent infected. Mostly branch infection. Detail figures in Concord State Forester's office. See Mr. E. F. Morrill, Lyme for location. Bushes in lot removed 1925, but not across road.

(b) Grafton. Rogers lot Heavy infection. No figures or data. See Selectmen for exact location of lot. Known as Rogers or Suncook lot.

(b) Wentworth. Hooper Lot. Figures on same in Concord State Forester's office. See Eugene Downing, Wentworth for location or Mrs. Hooper just south of Wentworth Village on State road. Trees badly infected. No work done here, until 1930, at which time the Ribes were eradicated.

See G. F. Richardson, Lebanon.

- a = Reproduction.
- b = Medium aged pine.
- c = Mature pine.

1. EFFECT OF BLISTER RUST ON WHITE PINEHillsborough County

North Weare. Blister rust infection on reproduction. Lot 2 acres of young pine, heavily infected - dead and dying trees conspicuous. Found in 1926. Infection due to skunk currants (Ribes glandulosum). Oldest infection 1914. See Austin Drewry at Drewry Brothers Toy Shop at North Weare.

Pelham. Sherbourne Lot. 4 acres of young pine heavily infected found in 1924. Infection due to gooseberry - removed in 1927. Oldest infection 1919. See Ernest Sherbourne, South Pelham.

Temple. Sheldon lot. 6 acres of middle aged pine, heavily infected, dead and dying trees conspicuous. Infection due to cultivated black currants. Removed 1922. No new infections. Detailed study made of damage and spread. See Mr. Sheldon. Apply for direction at Temple post office.

Merrimack County

(a) Bradford. Couch Plantation - 1 acre. Heavily infected dead and dying trees conspicuous - found in 1923 - oldest canker 1917. Most infection 1919-1921 - caused by skunk currants. All Ribes destroyed 1923, studied 1925, no new infections noted - 6 years exposure to infection, detailed study made of damage. See Mr. Couch, Bradford Center or Milton Craig, Selectman, Bradford Center.

(b) Andover. Proctor academy lot - 1 acre. Discolored branches conspicuous - found in 1922, oldest canker 1914. Most infection found in 1918-1919, caused by gooseberry bushes. All Ribes removed in 1922, 8 years exposure to infection, detailed study made in 1925, area directly back of school buildings. See Fred Emerson for complete directions, Andover.

(b) Boscawan. Weir Lot - 1 acre. Discolored branches conspicuous, found in 1925, caused by scattered pasture gooseberry bushes and clump of black currants in midst of clump of pine. Ribes removed in 1925, oldest canker 1917, 8 years exposure to infection, detailed study made in 1925. Inquire direction to Weir Farm at Boscawen Village and Mr. Weir will direct to infection area.

(a) Canterbury. Kaine Lot - 3 acres. Dying branches conspicuous. Found in 1926, no study yet made. Located directly opposite residence of A. B. Chute, Hackleboro Road, 1 1/2 miles from Canterbury Center.

(a) Canterbury. Ed. Lawrence Lot. Near Baptist church and Kezar Academy - 1 acre. Heavily infected (74%) - dead and dying trees conspicuous found in 1924, oldest canker 1917, most infection 1919, caused by skunk and black currants. All Ribes destroyed 1925, studied fall 1925, no new infections noted, 8 years exposure to infection, detailed study made of damage. See Ed. Lawrence (owner) or Frank Davis opposite Kezar Academy.

a = Reproduction

b = Medium aged pine.

c = Mature pine.

1. EFFECT OF BLISTER RUST ON WHITE PINEMerrimack County

(a) Hooksett. Thompson Estate. Clay Pond Section, 20 acres in extent, dead and dying trees conspicuous, found in 1922, oldest canker 1918. Most infection 1920-1921 caused by skunk currants. All Ribes destroyed in 1923, studied in 1923, 6 years exposure to infection, detailed study made of damage. See Chas. Morse at Thompson's Corner, Hooksett on State Road at point where Concord-Manchester State road branches, one section going to Hooksett Village the other towards Concord.

(a,c) Newbury. Blodgett Landing infection area. Mr. Black present owner 70.2 acres, dying trees conspicuous, found in 1919, oldest canker 1912 most infection caused by cultivated Ribes mostly with new wild gooseberry and skunk currants. All Ribes destroyed in 1920. Studied in 1920, 8 years exposure to infection, detailed study made of damage. See Mr. Black present owner. Lot can easily be located as it is just at entrance to Blodgett's Landing from new State road Newbury to New London.

(a) New London. Dr. C. A. Lamson plantation on edge of Lake and directly abutting his summer cottage, 2 acres, found in 1924, oldest canker 1917. Most infection 1919, caused by clump of skunk currants, all Ribes destroyed 1924, studied 1925, 7 years exposure to infection. Detailed study made of damage. See Doctor Lamson in New London village or inquire at post office direction.

(a) Northfield. W. B. Hill (Shirley pasture, Bean hill) 8-10 acres mostly reproduction with larger growth bordering, infection as yet not very conspicuous although a study would show rather high percentage of infection, area not studied yet. Go to Clyde Gile's farm and ask for directions from there; caused to great extent as hasty examination showed by scattering gooseberry bushes.

(a) Pittsfield. Samuel Jenness Lot, Jenness Hill, 8-10 acres fine reproduction, dead and dying trees conspicuous - found in 1924, oldest canker 1916, most infection in 1918-1919 caused by scattering gooseberry bushes, all Ribes destroyed in 1924, studied in 1924, 8 years exposure to infection. Detailed study made of damage. See Frank T. Garland for complete directions.

See T. J. King, Concord.

Rockingham County

- (a) Deerfield, N. H. Pawtuckaway Mt.
- (b) Exeter, S. Dudley Lot.
- (c) Stratham, Brierly Lot.

See L. C. Swain, Exeter.

- a = Reproduction.
- b = Medium aged pine
- c = Mature Pine.

1. EFFECT OF BLISTER RUST ON WHITE PINESullivan County

(a) Sunapee. Col. Wm. F. Richards plantation; 1-1/2 acres of plantation. Dead and dying trees conspicuous; found in 1922; oldest canker 1917; most infection caused by gooseberry and some skunk currants; all Ribes destroyed in 1920. Studied in 1924; 6 years exposure to infection; detailed study made of damage; on road from Edgemont Station (Concord-Newport State road) to Sunapee Harbor.

(a)(b) Sunapee. Colonel Murphy Lot, Shoe Manufacturer, Nashua, N. H. 5 acres; discolored branches conspicuous; no study made of area as yet, but such study will reveal rather high percentage of infection; located on road from Sunapee Harbor and between Sunapee Harbor and junction of State road to Concord and Newport. Entrance to lot at Gate house outlet dam along this road.

(a) Sunapee. Dr. E. P. Stickney, 58 Pleasant St., Arlington, Mass. owner; home farm 1-1/2 acres; disease not very conspicuous as yet. Found in 1926; oldest canker 1917; most infection 1919-1922; caused mainly by clump black currants 36 feet square all Ribes destroyed 1927; studied spring 1927; 10 years exposure to infection; detailed study made of damage. Ask for directions to get there at post office, George's Mills.

(a) Goshen. Dr. Ernest Howard's 2 to 3 acre plantation. Found during scouting in 1926, noted quite a bit of infection; study not yet made but believe will reveal quite a bit of disease present. Inquire at Mill Village, Goshen for directions to get there. Inquire at post office.

See G. F. Richardson, Lebanon.

Strafford County.(a) Strafford.

1. Area of about one acre very heavily stocked. About 1/2 trees infected. Owned by Jas. H. Stiles; area placed under control 1924 Ribes cynosbati - location in town right of road back of Stiles residence. Few dead trees.

2. Area of about 1-1/2 acres owned by Fred Huckins - 1/8 mile below Scribner's store on right hand side of old Bow Lake road near first brook. Infection caused by glandulostum which are very abundant. Both branch and stem infections. Some infection ten or more years old. Average age of trees about 12-16. Good demonstration area as a number of trees are dead. Damage worse nearest Ribes. Area not eradicated.

(a) Barrington 1. Area owned by Ralph Colcord; near of his house. Infected trees tagged; about two acres. Good demonstration area. Stem and branch infection. Source cynosbati. Area eradicated 1925.

(a) New Durham. Roadsides are owned by John Tash - 200 feet below his house on right hand side of State road going from New Durham to Farmington. Stem and trunk infections. Few dead trees. Not eradicated.

a = Reproduction.

b = Medium aged pine.

c = Mature pine.

1. EFFECT OF BLISTER RUST ON WHITE PINEStrafford County

Dover. Area owned by Frank Bennett; left hand side of "Dam" road 1/4 mile above Pacific Mills dam. About 3 acres badly infected. Stem and branch infections.

2. AREAS DEMONSTRATING SPECIAL FACTS REGARDING BLISTER RUST.Carroll County

Bartlett. Shedd Lot. Special study made of area. Ribes first removed in 1918 and again in 1924. Considerable infection in some parts of pine plantation caused by Ribes glandulosum. Careful study showed that there was practically no infection 250 feet away from the Ribes through the plantation although there was a high mortality near the Ribes. Very little infection has taken place since 1918.

See S. H. Boomer, North Conway.

Grafton County

Haverhill. Carr Lot - study was made on this lot in 1923 on two 1/4 acre plots. One plot showed 35% infection and the other 22% infection. It was eradicated in 1924. Lot is situated on Carr road in North Haverhill. Inquire for Daniel Carr.

See T. L. Kane, Woodsville.

Lyme. Morrill Lot. 70% infected; Mostly branch infection. Detail figures in Concord at State Forester's office. See Mr. E. F. Morrill, Lyme for location. Bushes in lot removed 1925, but not across road.

Lisbon. Moulton Lot. Have made studies on this lot, but figures are not completed yet.

Lisbon. Kay Lot. Two 1/4 acre plots were examined on this 40 acre stand. These were average plots on the top of hill where infection was general. Percentage of infection ran over 90 on both plots. Examined in 1922. At present all trees are dead.

Littleton. Fitch Lot. Study was made on this lot in 1923 on 1/2 acre average plot. It was found that in 1909 the plot was 100% healthy, in 1910 the plot was 98% healthy, in 1918 it was 62% healthy. Of 38% that were dying in 1917 just 7.4% had succumbed. This lot is on the road to Patridge Lake out of Littleton. Inquire for Mr. Fitch.

Littleton. Elliott Lot. 41 acres; situated on Walker Hill road, between Lisbon and Littleton. This lot is an example of the seriousness of blister rust where no protection was given. Study was made in 1919. Oldest infection took place in 1906. In 13 years 66.6% of the trees became infected. The stand is composed of middle aged pine running up to 40 years.

See T. L. Kane, Woodsville.

Hanover Center. Trombly Lot. Detail study of infection increase and age. See A. B. Elder for location. Figures on file at Concord State Forester's office. Summary of figures, G. F. Richardson, Room 17, Bank Block Lebanon, N.H.

2. AREAS DEMONSTRATING SPECIAL FACTS REGARDING BLISTER RUSTGrafton County

Wentworth. Hooper Lot. Figures on same in Concord at State Forester's office. See Eugene Downing, Wentworth for location or Mrs. Hooper just south of Wentworth village on State road. Trees badly infected. No work done here, until 1930, at which time the Ribes were eradicated.

Plymouth. Town Lot. Pine set out on less than acre. No eradication work. Figures in Concord State Forester's Office. See Doctor Bowles for location at Plymouth.

See T. L. Kane, Woodsville.

Merrimack County

(a) Andover, Proctor Academy Lot.

1914	1915	1917	1918	1919	1920	1921	1922	1923	1924
2	1	21	30	33	19	12	15	9	14 - 156

Pines by age classes

	6	7	8	9	10	11	12	13	14	15	17	18	19	20	22	23	25	27	30
Dead	0	1	2	4	4	1	5	0	0	0	0	0	0	0	0	0	0	0	0
Dying	1	4	3	2	32	8	37	4	1	6	2	1	1	14	2	1	17	2	1
Healthy	0	0	1	4	6	10	7	1	2	2	1	1	0	6	1	1	6	0	1

(a) Boscaawen. Weir Lot.

1917	1918	1919	1920	1921	1922	1923	1924
6	25	38	22	23	21	9	1 - 145

Pines by age classes

	6	7	8	9	10	11	12	13	14	15	17	18	20	22	25	30
Dead	0	0	0	0	10	2	2	0	0	2	1	0	0	0	0	0
Dying	1	3	4	5	11	5	10	1	4	13	2	2	36	3	27	2
Healthy	0	0	1	4	8	1	1	1	1	3	0	2	12	0	11	0

(a) Bradford. Couch Lot.

1917	1918	1919	1920	1921	1922	1923	1924
1	32	40	27	35	26	4	2 - 167

Pines by age classes

	5	6	7	8	9	10	11	12	13	14	15	19
Dead		1	1	7	0	3	2	3	1	0	1	0 - 19
Dying		1	1	9	5	19	43	40	9	9	11	1 - 148
Healthy	1	3	1	7	6	21	20	21	9	8	1	0 - 98

a = Reproduction.

2. AREAS DEMONSTRATING SPECIAL FACTS REGARDING BLISTER RUST.Merrimack County(a) Canterbury. Lawrence Lot.

	1917 - 1918 - 1919 - 1920 - 1921 - 1922 - 1923 - 1924												
	5	21	124	81	56	57	9	1	-	364			
<u>Pines by age classes</u>													
	7	8	9	10	11	12	13	14	15	16	17	18	
Dead	1	10	14	41	43	6	2	0	0	0	0	0	- 117
Dying	1	5	11	53	117	41	14	2	1	1	0	1	- 247
Healthy	0	4	8	37	56	13	6	4	0	0	0	0	- 128

(a) Hooksett. Thompson Lot.

1918	1919	1920	1921	1922	
20	90	376	720	77	- 1283

(a) New London. Lamson Lot.

1917	1918	1919	1920	1921	1922	1923	
10	16	23	14	4	10	5	- 81

New London. Lamson Lot. Plantation, trees all same age, 12 years.
None dead, 81 dying, 23 healthy, total 104. Other lots, figures not available to me.

See T. J. King. Concord.

Sullivan CountySunapee. Stickney Lot.

1917	1918	1919	1920	1921	1922	1923	1924	
4	17	77	54	32	31	10	8	- 233

Pines by age classes

	5	6	7	8	9	10	11	12	13	14	15	
Dead	0	0	0	0	0	0	0	0	0	0	0	- 0
Dying	0	0	0	38	1	130	0	55	0	0	9	- 233
Healthy	1	7	3	128	1	226	1	98	0	1	7	- 473

Blodgett Landing infection area. Data now in Washington office.
Data compiled by W. J. Endersbee. Figures on other areas previously mentioned not available.

See T. J. King, Concord.

Strafford CountyStrafford. Fred Huckins. Damage." Jas. H. Stiles.Dover Frank Dennett.Fred Huckins Spread.

See W. H. Cullen, Laconia.

New Hampshire

2. AREAS DEMONSTRATING SPECIAL FACTS REGARDING BLISTER RUST.

Town	Acreage examined	No. trees examined	No. trees infected	No. branch cankers	No. trunk cankers	Percentage infection
Bradford	1/4 A.	265	166	-	-	62.6%
Canterbury	1	492	364	-	-	74
Hooksett	1/4 A	1025	503	-	-	49.1
"	1/4 A	1521	471	-	-	31.
"	1/4 A	1601	469	-	-	29.3
"	1/4 A	1868	310	-	-	16.6
"	1 A	6015	1753	-	-	29.1
New London	1/4 A	104	81	38	43	78
Pittsfield	1/8 A	20	11	-	-	55
"	1/8 A	100	63	-	-	63
"	1/8 A	104	67	-	-	65
"	1/8 A	52	41	-	-	79
Sunapee	1-1/2 A					52.5
"	1-1/2	705	227	60	167	32
Boscawen	1 A	191	145	-	-	76
Andover	1/2 A	206	156	72	84	76
Newbury	70.2 A	7527	789	-	-	10.5

See T. J. King, Concord.

3. EFFECTIVENESS OF RIBES ERADICATION.

Carroll County

Dartlett. Shedd Lot. Special study made of area. Ribes first removed in 1918 and again in 1924. Considerable infection in some parts of pine plantation caused by Ribes glandulosum. Careful study showed that there was practically no infection 250 feet away from the Ribes. Very little infection has taken place since 1918.

See S. H. Doomer, North Conway.

Grafton County

Bethlehem. Beck Lot. Morton Lot, adjoining Beck Lot.

Littleton. Fitch Lot. Judge Gray lot, on Farr hill road.

North Haverhill. Carr Lot. Emmons lot, adjoining Carr lot.

Senator Keysarlot on D. C. highway.

Warren. Keysar Lot. Inquire at post office.

See T. L. Kane, Woodville.

Study plots have recently been made by Agent Richardson in Grafton County in the towns of Canaan, Hanover and Lebanon, and in Sullivan County at Claremont.

See G. F. Richardson, Lebanon.

Merrimack County

Newbury. There is one outstanding area which is a good demonstration of the removal of Ribes effectively controlling blister rust. This is the Blodgett landing area. Numerous visits there have failed to reveal any new infections there, although no intensive study has been made.

See T. J. King, Concord.

3. EFFECTIVENESS OF RIBES ERADICATION

Rockingham County

Stratham. Brierly Lot.

See L. C. Swain, Exeter.

Strafford County

Dover. E. W. Rollins estate.

Dover. Frank Bennet lot.

Farmington. Harrison Waldron lot.

Rollinsford. J. Roberts lot.

Rollinsford. L. E. Baer lot.

Scarcity of new infections and numerous old ones scattered over entire town of Rollinsford.

Old infections and lack of new ones present.

See W. J. Cullen. Laconia.

4. EFFICIENCY OF RIBES ERADICATION.

Coos County

Shelburne. On the Stone Lot. Two years after eradication, 40 Ribes glandulosum were found that had come up from roots. On the original eradication about two thousand Ribes were pulled by the crew. This lot adjoins the Stone farm.

Carroll County

Freedom. I have no exact figures regarding Ribes regrowth. This year we worked a section which was covered in 1923. From the bunches of Ribes in the trees a large number must have been pulled. On a rock pile we found just two currants where several hundred were pulled in 1923.

See S. H. Boomer, North Conway.

Grafton County

Lisbon. An area of probably an acre here where about two thousand Ribes glandulosum were eradicated in 1925. In 1926 I went over the area again and found about sixty Ribes that had come up. In 1927 I found only three. This area is on the D. C. highway.

Littleton. Gray Lot. Six years after eradication no Ribes were found to have been missed or none had come in.

Fitch Lot. Five years after eradication, thirteen Ribes were found. Eight of these were missed by the crew and five had come in since then.

No detail plots on this in district except general from areas worked.

See T. L. Kane, Woodsville.

Merrimack County

Have no figures available on this phase of the work. Have several areas in mind where I hope to be able to secure such information this spring before eradication season.

See T. J. King, Concord.

4. EFFICIENCY OF RIBES ERADICATION

Strafford County

Have no detailed figures. Cost of re-eradication in Somersworth, Rollinsford, Milton and Dover from 25 to 40% less than original work.

Hillsborough County

New Ipswich. Sample plots established in 1927. West side of Souhegan River at High Bridge in New Ipswich. See County Agent at Milford, for direction and information.

5. EFFECT OF DIFFERENT SPECIES OF INFECTED RIBES ON WHITE PINE

Coos County

Randolph. One lot here showed an infection of about 20%. This infection all came from these Ribes growing in gardens of summer residents close to the lot.

Lancaster. Took about 40 species of these Ribes from a garden that was close by a lot heavily infected with blister rust. Few wild Ribes were found in lot.

Have only four lots in mind that I am quite positive were infected from Ribes glandulosum. One in Lisbon, one in Shelburne and two in Haverhill.

See T. L. Kane, Woodsville.

Carroll County

Freedom. Povear property. Ribes glandulosum caused considerable infection in pine plantation. The owners pulled other Ribes but did not recognize glandulosum. They were removed in 1925.

Moultonboro. Plant Estate. Ribes glandulosum in a swamp adjacent to young pine grove caused about 30% of the trees to become infected. Spread from glandulosum is not over very long distances. Cynosbati causes heaviest infection in Carroll County.

Moultonboro. Hunter Lot. Many large bushes per acre scattered through pine lot. Most of small pines up to 20 feet high infected - overstory of large pines not infected but when they are removed young pine will not be worth much. Ribes were removed in 1924.

Sandwich. Thompson Lot. Described under No. 1. Other lots around the Ossipee Mountains near the Hunter Lot are in the same condition as it is.

Tuftonboro. Edgerly Lot. About 2,500 gooseberry bushes on one acre of land among young pines caused rather a heavy infection. The Ribes were removed in 1926. The pines seeded in from an old growth nearby.

Tamworth. Hemenway Estate. Ribes nigrum caused some large white pines to become infected about 40 ft. above the ground. The Ribes were removed perhaps nine years ago.

Wakefield. Small area west of road going north from North Wakefield postoffice. Considerable infection caused by row of Ribes vulgare planted in field. Area located in 1926 and the Ribes were removed at that time.

Wakefield. Jones Lot. Hirtellum. Gooseberry bushes scattered among young pines caused about 25% infection although no study has been made of the area.

See S. H. Boomer, North Conway.

5. EFFECT OF DIFFERENT SPECIES OF INFECTED RIBES ON WHITE PINEGrafton County

Warren. A lot here was heavily infected from Ribes growing in the Weeks garden close by.

Lisbon. Kay Lot. When we eradicated this lot we found 14 specimens of these Ribes along a fence row and close to the lot. I believe that a good deal of the infection came from these Ribes.

Ribes cynosbati grow in abundance in this locality and are considerably larger than those found in the southern part of the State. As most of the pine lots in this district range in infection from 15% to 60% it is to be assumed that the greater proportion of infection is caused by this kind of Ribes, since only a few other lots that I know of were damaged from other species. From my observation I have concluded that this is the worst enemy of white pine in my district, as no Ribes nigrum are to be found. Ribes lacustre. This species of Ribes are found in several localities in this county but I have in mind only one concrete example of their effect on white pine and that is the Adams lot in Littleton.

See T. L. Kano.

Merrimack County

Hooksett. Thompson Lot. New London, Lamson lot (plantation).

See T. J. King, Concord

Cultivated Ribes

Blodgett Landing. Infection area good example of infection caused by cultivated Ribes.

No outstanding area. As a rule cultivated currants on a particular plot are in mixture. That is if there are any blacks (nigrum) they are in mixture with other species. As a rule there are very few nigrum among the cultivated, destroyed, most of them being rubrum.

Wild Ribes

Cynosbati, Andover, Proctor Academy lot.

Boscawen, Weir lot (1 clump Americanum)

Pittsfield, Samuel Jenness lot.

Glandulosum Bradford, Couch plantation

Canterbury. Lawrence lot (1 clump Americanum)

See T. J. King, Concord.

Hooksett. Thompson lot. New London, Lamson lot (plantation).

Rockingham County

Exeter. Aureum, rear of high school.

Nottingham. Hirtellum area here.

See L. C. Swain, Exeter.

Strafford County

Infection in towns of Madbury, Rollinsford, Durham, Farmington, Rochester and Dover, also in Belmont, Belknap County caused principally from cynosbati. Infection in towns of Barrington, Milton, and Strafford caused principally from glandulosum.

See W. J. Cullen, Laconia.

New Hampshire

6. EFFECT OF BLISTER RUST IN WHITE PINE PLANTATION

Carroll County

Jackson. Hurlin plantation. Study made with following results. 211 trees found out of 1000 planted. 63 had stem cankers, 83 had branch infection and 65 were healthy. They were surrounded by beds of skunk currants, too numerous to warrant eradication.

Jackson. Elkins Plantation. Planted in natural hardwood country. Many skunk currants. Trees planted in 1914 and about 60% of the trees examined had cankers on limbs or trunk.

Bartlett. Shedd plantation and Freedom, N. H. Povear plantation are quite hard hit by blister rust. The former because of skunk currants and tristo and the latter by skunk currants and cynosbati. Both have had the Ribes removed but they should have been removed about 10 years before. Plantations seem to be hard hit when there is any Ribes near, probably because of the uniform size of the trees.

See S. H. Boomer, North Conway.

Coos County

Stratford. The Hutchins plantation of 100 acres is about the best example of what damage blister rust can do to young pine. On close examination it was found to be infected just 38%. This pine was set out in 1918 and Ribes were eradicated in 1927. It is situated on the D.W. highway, about two miles south of North Stratford. There is a tablet in front of it with the name of plantation, date of planting and so forth engraved.

See T. L. Kane, Woodsville.

Grafton County

Piermont. The State forestry plantation has a heavy infection from blister rust. This was eradicated in 1925.

See T. L. Kane, Woodsville.

While there have been no studies made for detailed data on this question, there are a number of plantations in the district and a lot of blister rust in some of them.

See G. F. Richardson, Lebanon.

Hillsborough County

Dennington. Tall pines camp lot. Infection on pines planted 1908. Infection took place 1917-1919. Oldest infection 1915. Eradicated 1922. Re-eradicated 1927. Conspicuous trunk cankers.

See John Weston, Dennington.

Rockingham County

Northwood, Dr. G. S. Foster lot.

See L. C. Swain, Exeter.

6. EFFECT OF BLISTER RUST IN WHITE PINE PLANTATION

Merrimack County

Bradford. Gouch lot - Bradford Center.
 Boscawon. Fred James lot (formerly Ed. Clough) (no study made)
 New London. Dr. Lamson, Pleasant Pond.
 Wilmot. F. E. Goodhue, Wilmot.

See T. J. King, Concord.

Strafford County

Rollingsford. Present in 15 year old plantation owned by L. E. Baer, and Penn. Tuttle. Have not noticed any serious outbreaks of blister rust on plantations to date. Plantations owned by Lawrence Haley, Barrington, infected.

See W. J. Cullen, Laconia.

Sullivan County

Goshen. Dr. Ernest Howard - beyond mill village.
 Sunapee. Col. Wm. F. Richards - road between Edgemont and Sunapee Harbor.

See T. J. King, Concord.

7. EFFECT OF BLISTER RUST ON ORNAMENTAL PINE, CUTTING OUT CANKERS

Carroll County

I have seen only one example of the cutting out of a canker on an ornamental tree. This tree was a small one and had a branch infection near the trunk. The bark was cut around the base of the limb and the limb was removed. Just enough of the bark was left to prevent the tree from being girdled. The tree was examined this year but not in the spring and it is difficult to say now as to the efficacy of the operation. The hyphae seems to extend some distance beyond any external evidence of the canker. Tree died 1930.

See S. H. Dooner, North Conway.

Grafton County

None known in this section.

G. F. Richardson, Lebanon.

North Haverhill. Senator Keyes lot.

Bethlehem. The Beck Estate and the Glessner Estate.

Franconia. Hotel Forest Hills.

Sugar Hill. McGuire estate. The McGuire pines were the only ones where cutting out of cankers was done. One year after date of cutting I examined them and found mycelium.

The above are examples of infection on ornamental white pine.

See T. L. Kane, Woodsville.

7. EFFECT OF BLISTER RUST ON ORNAMENTAL PINE, CUTTING OUT CANKERS

Merrimack County

None that I know of in either of these counties.

See T. J. King, Concord.

Strafford County

Have no knowledge of blister rust on ornamental white pine and know of no cases where cankers have been cut out on such.

See W. J. Cullen, Laconia.

8. LOCATION OF WILD RIBES SPECIES

Carroll County

Wolfeboro. Americanum near the memorial hospital.

Glandulosum on the west side of the State road about a mile south of Eaton toward Freedom. Large clumps of Ribes. Also in Jackson near Hurlin plantation.

Cynosbati all around the base of the Ossipee mountains and around the base of the Sandwich range in Sandwich.

Hirtellum throughout Wakefield, Brookfield and Tuftonboro and Wolfeboro. Large clump of these Ribes in a swamp back of the Wakefield town forest. Many of them in a swamp a half mile north of the State road where it meets Twenty Mile Bay in Tuftonboro.

Triste. In hardwood swamp on north edge of the Wakefield town forest. Along Swift river in the Passaconaway Intervale. Not very common in Carroll County.

See S. H. Boomer, North Conway.

Grafton County

Found cynosbati everywhere throughout the county and in great abundance. For the most part they are exceptionally large. Glandulosum. This species are not in such great abundance. They are found in swamps and in the hardwoods. We haven't a great many swamps in this district.

Lacustre. This species are found in Littleton and Franconia in great numbers. Now and then you will run across them in Whitefield; Cooks County, but I have never found them in any other towns. Have found very few Triste. In Warren and Haverhill we pulled about one hundred.

Note:-The above are all the species found in county.

See T. L. Kane, Woodsville.

Merrimack County

Americanum very seldom found but have been found in various sections of county. Glandulosum and cynosbati general throughout both Merrimack and Sullivan County. Triste not heavily distributed; but occasionally found in almost every town in my jurisdiction. Never have found hirtellum, lacustre or rotundifolium in my districts.

See T. J. King, Concord

8. LOCATION OF WILD RIBES SPECIES

Strafford County

Americanum, glandulosum, triste, cynosbati present over entire district.

See W. J. Cullen, Laconia.

Wild Ribes are general throughout the district, mostly the following species, glandulosum, cynosbati and hirtellum. Triste and lacustre are more or less general in the swamps.

9. WHITE PINE AS A CROP

Carroll County

Conway. Thos. Thompson of North Conway has handled his timber lot as a crop, taking off some almost every year. Last year when red pine was not supposed to be worth much he sold his for \$16 per thousand on the stump and had the lumber in each tree over 50 feet. He has carried on some cutting on the strip system and had good luck in getting natural reproduction. This winter he is going to cut another strip adjacent to one cut about eight years ago.

See S. H. Boomer, North Conway.

Grafton County

Holderness. O. M. Pratt has best example of white pine as a crop in this section. He has figures and all details. Suggest any one interested visit his place.

Nearly all the farms in this district have more or less white pine areas on them and the owners are realizing more and more that it is one of their valuable crops, however the question of taxes is the main problem in most cases.

White pine in North Grafton County runs about 15 per cent. It is not, by far the major crop. In Coos County it would run about 5%. The pine seems to grow mostly along the Connecticut and Ammonoosuc river valleys. Of course there are strings of it here and there but not to amount to much. On the eastern side of Grafton County there is very little white pine. This district is not considered a white pine belt. However, there is a great deal of white pine planting being done every year and this will increase the percentage.

See T. L. Kane, Woodsville.

Merrimack County

Northfield. Fred Lord (owner). 200 acres in extent, cut in 1912, second cutting 1922: Cutting restricted to 6 inch diameter. Logging roads built so that young growth would not be injured.

9. WHITE PINE AS A CROP

1912	- - - - -	-250 M	
1922	- - - - -	-225 M	475 M
1912	at \$9 per M	- - -	\$2,250
1922	at 10 per M	- - -	<u>2,475</u> \$4,725.00

Mr. Lord figures that in 10 to 12 years from 1922 cutting there will be another crop.

See T. J. King, Concord.

Rockingham County

Several lots (A.N. Dow, Exeter).

See L. C. Swain, Exeter.

Strafford County

Lee, Alfred Durgin is only person who is really raising white pine as a crop.

See W. J. Cullen, Laconia.

10. OLD GROWTH WHITE PINES.

Carroll County

Intervale. In the town of Conway is the location of the Merriman Lot. It contains the largest stand of old growth white pine in the county. Probably 50 acres or more. Mr. Pierce has taken several pictures of sections of these woods.

The Cathedral Woods of Intervale are old growth pines and the Conway town forest adjoining is of the same type.

Tamworth. Hemenway Lot contains some fine examples of old growth pines.

Wakefield. Richards Lot near Sanbornville consists largely of old growth white pine, about the last in the town. The trees are so large that there is a possibility that the butts of the trees may not be sound. This lot is on the market and may be sold anytime. Lot cut 1928.

See S. H. Boomer, North Conway.

Grafton County

Canaan. H. G. Robie, Canaan Street has a few trees that are old growth near the Lake on Canaan Street. This is the only case that I know of where there are any real old growth pines.

See G. F. Richardson, Lebanon.

Very little old growth white pine is found in North Grafton or Coos Counties. There are about 10 old growth white pines on the Adams lot in Littleton. The largest measured 42 in. D.B.H. These pines seeded in about 15 acres of good growing pine and are a fine example of the leaving of seed trees.

See T. L. Kane, Woodsville.

10. OLD GROWTH WHITE PINES

Merrimack County

Epsom. Carpenter estate (Locke pasture) - 100A-valued at not less than \$40,000. N. E. corner of Epsom on so-called North East Road. To get into this road go to Northwood Narrows. Inquire at Gile's store at Northwood Narrows.

The James Lot - Orin James of Northwood owner; valued at not less than \$14,000. Directions for reaching it same as those of the Carpenter (Locke pasture.)

Sutton. Primeval pines of North Sutton, property of Society for Protection of New Hampshire forests, under the specific care of North Sutton Improvement Society; 22 trees living; 5 acres in extent; trees scattered; Go to North Sutton and inquire at post office.

See T. J. King, Concord.

Strafford County

Durham. Very little old growth. Small tract is owned by Arthur Fernald of Madbury, about five acres owned by John Dame of Lee. University of New Hampshire college woods in Durham.

See W. J. Cullen, Laconia.

11. WHITE PINE PLANTATIONS OF DIFFERENT AGES AND SPECIAL SIGNIFICANCE AS REGARDS SITE, GROWTH, ETC.

Bellknop County

Franklin Potts of Philadelphia has 50 acre plantation in Laconia, and Gilmanton.

Belmont. Harry Rogers has 5 acre plantation. Growing well. University of New Hampshire and town have plantations scattered over their holdings.

Have list of plantations but have not yet examined all.

W. J. Cullen, Laconia.

Coos County

North Stratford. 60,000 trees were set out in 1910 by John Hutchins, half of these were Norway spruce. Except for the fact that a great number were attacked by blister rust, the pine is doing better than the spruce. Mr. Hutchins set out ten thousand more on another plot in 1926 and these seem to be doing first rate. Both these lots are protected from further infection of blister rust.

Planting of white pine has been going on in this section for about 20 years and lately there seems to be more interest in planting this species than in any other. Up to the present time I know of orders for 40,000 for the spring of 1928.

11. WHITE PINE PLANTATIONS OF DIFFERENT AGES AND SPECIAL SIGNIFICANCE AS REGARDS SITE, GROWTH, ETC.

There are 12 white pine plantations containing 140,000 trees in Coos County that I have on file.

The oldest of these plantations is situated in Thornton and was set out about twenty years ago by Harry Emmons. It contains 44,000 trees. The soil is adapted to white pine and the trees are doing splendidly. This lot and four other plantations owned by Mr. Emmons, have been protected from blister rust.

See T. L. Kane, Woodsville.

Carroll County

Bartlett. Shood Lot. Fastest growing plantation in the county. Consists of white, red and Scotch pine with some fir, spruce and larch. Have seen pine with 42" growth in one season and many of them with three foot growth.

Moultonboro. Adams Plantation, about 50 years old and covering 40 acres, red and white pine. Trees were planted 3 x 3 which was too thick and they were not thinned. They run very tall and thin but will average about 30,000 to the acre. This winter all the trees over 9" D.B.H. are being cut.

Wolfboro. Dr. Henry F. Libby plantation is probably the outstanding plantation in Carroll County. Approximately 80,000 trees have been planted over a period of 25 years. Mostly white pine. Ribes were removed in 1920 and there is very little infection. Doctor Libby is still planting so there are trees of all ages. Weevil damage severe.

See S. H. Boomer, North Conway.

Grafton County

Franconia. An experiment was tried here in 1927. We set out six different species of evergreen and the white pine seems to do better than the others. Probably the best growth shown by white pine in this section are the trees set out at the Hatcher in Warren. Of the 51 plantations in No. Grafton County 32 have been protected from blister rust. Six have been protected in Coos County.

See T. L. Kane, Woodsville.

Haverhill. U. S. Senator Henry W. Koyes has a plantation of 20,000 trees in this town set out about ten years ago. These trees are doing exceptionally well. At intervals of four years Mr. Koyes has set out 4,000 more. These lots have been protected from blister rust.

11. WHITE PINE PLANTATIONS OF DIFFERENT AGES AND SPECIAL SIGNIFICANCE AS REGARDS SITE, GROWTH, ETC.

Grafton County

Bethlehem. Deck Estate 16,500 trees were set out in 1926. I looked the plantation over last year and found that only about 100 had failed to come up. This lot has been protected from blister rust. The land is natural pine land.

There are 51 white pine plantations containing 255,150 trees, in North Grafton County that I have on file.

There are at least 407,000 white pine set out in this district and at the present time the facts and conditions on these plantations are not complete. Detail data is being obtained on these as fast as possible and will be written up at a later date.

See T. L. Kane, Woodsville.

Merrimack County

Bradford. Oliver Hadley. Started planting 1924 still planting; 21,000 trees; 18,000 pine (white), 1,000 white ash, 2,000 white spruce. Planting cut over and other land not suitable for other purposes.

Doscawen. Clough Plantation. Now owned by Fred James, Doscawen Plains; 10-12 acres in plantation; made approximately 12-14 years ago; trees making very good growth; planted in old abandoned field. Mr. Clough has planted in all 68,550; 1912-1917.

Concord. Concord Electric Company owner; 500,000 trees (white pine) planted about 1908; trees raised in own nursery; land surrounds their power plant at Sewall's Falls, West Concord.

Concord. Concord Water Works; planted 98,500 trees; 87,000 white pine and 11,500 red pine. First planting 3 acres in 1895; second planting 1908, 2 acres; remainder done since 1913. Source of stock 1895. 1908 Shady Hill Nursery, Massachusetts; remainder of stock from W. H. Forest Nursery. Planting surrounds source of Concord's water supply at so-called Long Pond in West Concord section of city. Mortality rate low. Pine is making very good growth.

Hopkinton. W. F. Thayer. Started planting 1912, completed 1914 - 12,000 white pine; pine making vigorous growth; located just off the Concord-Hopkinton State road approximately one mile West of the Concord-Hopkinton town line.

New London. Dr. C. A. Lamson. 2 to 3 acres; plantation made approximately 12 years ago; exceptionally good growth; located on shore of Pleasant Pond next summer home of Doctor Lamson.

Sullivan County

Claremont. Claremont Water Works; large sized plantation protecting watershed of reservoir; have not yet compiled information on this but have it catalogued.

11. WHITE PINE PLANTATIONS OF DIFFERENT AGES AND SPECIAL
SIGNIFICANCE AS REGARDS SITE, GROWTH, ETC.

Strafford County

Dover. S. D. Felkner has plantation covering about 30 acres in Barrington and Rochester all under 8 years old. Growing well and free from rust.

Penn Tuttle of Dover has 10 year old plantation. Damaged by weevil. Weevil has affected most of older plantation.

Rollingsford. 25 year old white pine plantation owned by G. B. Haley. Growing well. Blister rust present in small quantities. Sandy soil.

L. E. Baer has 30 acre plantation here, 15 years old and badly damaged by weevil.

12. WHITE PINE MANAGEMENT

Carroll County

Chocorua. Woodlot of Professor George Baker. A pine stand, 25 to 40 years old, much improved by the removal of hardwoods.

Taken from the Biennial Report of the Forestry Commission, New Hampshire, 1917-18, pages 53-54.

Tamworth. J. M. Perkins Lot. Has thinned pine from time it was two feet high until it is 30 feet high. Cuts all hardwood which interferes with pine. Lops it off about waist high. Has succeeded in getting pine stands in what would have been pure hardwoods. Pruned pine with axo as high as he could reach.

Tamworth. Bowditch Estate. Have just put in a Lane sawmill to saw thinnings from their own woods and for custom sawing. Have thinned probably 3,000 feet from 5 to 10 acres of pines. The results of the thinning will be interesting to watch. The trees are along the State road near Chocorua Lake.

Wakefield. Union district. Wm. M. Lord pruned some pine about 20 years ago and thinned it at the same time. Is planning to thin it again this year.

See S. H. Foomer, North Conway.

Grafton County

Holderness. O. M. Pratt. Most outstanding along these lines. Has large area and has carried on work for number of years. Samples and detail data on all conditions. See Mr. Pratt. Telephone under Plymouth, N. H.

In 1924, Mr. Mallory of Sugar Hill did considerable release cutting. He took out all the grey birch and left just the white pine on a twenty acre stand. In my opinion he thinned too thoroughly. His place will serve as a good example for discussion. He has practically pruned all his white pine near his estate, about ten acres.

Pruning has been done to a considerable extent during the past three years. At present, I have on file about ten lots where pruning was done. There has been some thinning but not to a great extent, although I believe

12. WHITE PINE MANAGEMENTGrafton County (Cont'd)

that in the future a great deal of this will be done.

There has been very little release cutting. However, I think that woodlot owners are beginning to learn the advantages of thinning, pruning and release cutting and in another year there will be a good deal of this forestry work put into practice. In conversation with men interested in forestry, I find that silviculture has interested them and in the future they will give more time to woodlot management, especially white pine.

See T. L. Kane, Woodsville.

Hillsborough County

South Amherst. All ages of pine, showing effects of pruning and thinning, 200 acres. See Charles Upham.

Goffstown. Herman Smith. Selective cutting of mature trees only. Splendid reproduction, appearing from seed trees remaining.

Nashua. See E. O. Brown, Yardmaster at Nashua Mill. Thinning, pruning and release cutting. Nashua Manufacturing Company 500 acres.

Merrimack County

Andover. A. W. Rollins Estate, 25-30 acres; released over period of 4-5 years; pine now 25 years on average and growing vigorously. Inquire Mrs. A. W. Rollins, Andover.

Bradford. Jas. J. Johnson; telephone operator; has 3 lots from which he has removed birch to release pine; inquire at telephone exchange. Has done some exceptionally good work having developed areas without outside help.

Concord. Geo. E. Runnels. Has done quite a bit; am to get details this spring.

Chichester. W. S. Langmaid. 10-15 acres; Chichester; work done since 1922. Inquire W. S. Langmaid or J. C. Langmaid.

Sutton. Francis Johnson. Road Bradford-Sutton (state road) has permanent electric sawmill; cuts larger, leaving smaller pine thus permitting removal of 50 M annually.

Webster. Anderson Estate. 900 acres; over period of years Superintendent M. J. Walker has brought approximately 100 acres clear pine from areas in which pine was originally suppressing young growth. Inquire Davisville, P. O.

Webster. M. J. Walker. 10-12 acres; released when Mr. Walker was young man; today much ready to cut; would have been nearly all suppressed - now clear pine. Inquire M. J. Walker, Contoocook. Pruning done on all lots he has improved at all. He starts pruning when his planted stock reached a height of six feet and continues periodically.

Thinned once, intends to give another thinning when conditions (market, etc.) right.

12. WHITE PINE MANAGEMENTMerrimack County

Webster, E. C. Gerrish. Handles all his work under plan of thinning through taking out larger trees. Owns 1000 acres; approximately 350 acres either pure or mixed pine. Has possibilities of cutting 200 acres per year if market right; releasing periodically to get own wood and wherever profitable for sale. Inquire Contoocook P. O.

See T. J. King, Concord.

Merrimack County

Hooksett. Thomson Lot.

Pittsfield. Samuel Jenness Lot.

Pembroke. R. B. Robinson. Located on Concord-Manchester State road just beyond sanitorium.

Northfield. Shood Estate. (Fred Boynton, Tilton, present owner) 15-20 acres in extent; right side of this area is an area clean cut with no reproduction; contrast shows good judgment of one and folly of other method. Inquire at Tilton Post Office for directions to get there.

Northfield. Fred Lord. To get details this spring.

Pembroke. Geo. B. Lake. (1 mile from Suncook.) Suncook - Pittsfield State Road.

1. Extremely interesting; lot cut 23 years ago; smaller growth left; cut following seed year; Gray birch came in quite heavily; Lake bought as part of general farm; has removed greater part of hardwoods; does some work himself; hires part of it done; to continue until pine entirely released; supplementary planting where distribution of pine not sufficiently heavy; to remove scrub pine to make room for much young growth now being held back; fine market for his logs; within 1/2 mile of Bailey's permanent sawmill; all he has to do is to stick logs on river bank, mill man does the rest; in 1926 got \$18.00 per M on river bank; cost \$4 per M to get them there. Area 65 acres.

See T. J. King, Concord.

Rockingham County

A. N. Dow, Exeter. Several lots.

See L. C. Swain, Exeter.

Raymond. *Woodlot of Mr. W. W. Dudley. Cutting of 200 cords of hickory, oak and birch, leaving a thrifty young growth of pine. Stumpage was here figures at \$1.50 to \$4.00 per cord.

Raymond. Woodlot of Mr. F. Folsom. Improvement cutting of approximately 50 cords of maple and birch in young pine stands with substantial margin of receipts over cost for stumpage.

* Taken from Biennial Rept. of Forestry Commission, New Hampshire, 1917-18, pages 53-54.

12. WHITE PINE MANAGEMENTRockingham County

During the winter of 1917 there were a great many cord wood operations carried on by private parties, some of which have resulted in decided improvements in forest conditions on the area covered. These cuttings have been largely in young pine stands where hardwood was removed. The following cases have been especially noticed on account of the excellent results secured.

Woodlot of Mr. Samuel D. Folker in Barrington, New Hampshire. Several hundred cords of hardwood cut from a mixed stand of hardwood and pine. The careful leaving of the pine in good growing condition will result in an excellent stand of timber on a considerable part of the area covered.

Sullivan County

Newport. Fred Aiken. County Commissioner; has been doing this work for years; details as to acreage not available at present, but plan on getting it this spring.

Strafford County

Thinning. D. F. Jenness, Walter Vickory, D. F. Jenness, of Rochester. L. E. Baer, E. W. Rollings, George Tuttle, Dover, N. H. Alfred Durgin, Lee.

Weeding. Austin Calef, Albion Weeks, Chas. Tebbetts, Frank Clark, Rochester. Jos. Cole, Clarence Felker, W. Knox, Harold Hayes, Madbury. University of New Hampshire. E. P. Phair of Durham, S. D. Felker, M. Joness, John Allen, Rochester. Fred Roberts, Bard Plummer, Mos Plummer, Milton. Wm. Thompson, Harrison Waldon, John Huckins, Farmington, Harry Roger, Belmont, Howard Sanborn, Sanbornton. E. B. Dane, Center Harbor.

Pruning. University of New Hampshire. Mostly done for appearance in majority of cases rather than with view of improving lumber. Do not think that very good work has been done in most cases.

Release cutting. Alfred Durgin, Lee. Cut to 10" dbh, S. Felker, Rochester, Wm. Thompson, Farmington.

See W. J. Cullen, Laconia, N. H.

13. UTILIZATION OF WHITE PINEGrafton County

Lisbon. Most of the white pine in this section is bought by the Parker-Young Co. Most of it is used for dimension lumber, shingles and boxes. Parker-Young Co. is the largest lumber company of its kind in the northern part of New Hampshire. There are a few other individuals who operate portable mills and sell all their pine for dimension stock.

See T. L. Kane, Woodsville.

Most of the pine in this district is cut by portable sawmills and while a good deal is used locally much is shipped outside the district. Being used for box boards, and other general uses of pine.

See G. F. Richardson, Lebanon.

Hillsborough County

North Weare. Toy shops of L. D. Clement and Drowry Brothers. All sizes of pine is utilized. Inquire at store at North Weare.

Rockingham County

Fremont. Cooperage plant. (Spaulding and Frost).

Merrimack County

Warner. Alcohol plant. Only one in New Hampshire; principally raw material dry hardwoods; products black iron liquor and charcoal; Warner's town forest furnished material, approximately 300 cords each year.

Bailey Lumber Co. - Suncook - box, shooks, retail lumber and housefinish.

Bickford & Huckins. Gossville (Epsom); lumber and housefinish.

F. E. Blodgett & Son Co. Wholesale & retail lumber, Concord.

Boutwell Lumber Co. Concord saw mill, retail lumber and housefinish.

J. C. Colby. Boscawon, operator, wholesale & retail lumber.

Concord Lumber Co. Concord - doors, sash, retail lumber and housefinish.

Dow, Barton & Pettingill. Suncook, wholesale & retail lumber.

Harold W. Dow. Warner. Sawmill and retail lumber.

H. L. Emery. Franklin. Boxes and lumber.

Holmes & Choate. Penacook, wholesale and retail lumber.

E. Andover. A. L. Moody. Box shooks.

Concord. N. E. Box Co. boxes.

Penacook, C. M. & A. W. Rolfe. doors, sash, blinds and house finish.

See T. J. King, Concord.

Sullivan County

Charlestown. G. G. Bowen. General mill and retail lumber.

Newport. Newport Lumber Co. Sawmill and retail lumber

Newport. Herbert Cutts. Sawmill and retail lumber.

Newport. John Sargent. Wholesale and retail lumber.

Sunapee. Trow & Sons. Lumber and finish.

Unity. Walker Bros. Stationary sawmill; custom saw

13. UTILIZATION OF WHITE PINE.

Strafford Co.

Rochester. Boxes, shooks and barrel staves manufactured here. Have large payrolls and furnish employment to many. Studloy Box Co. Champlin Box Co. United Box and Lumber Co.

See W. J. Cullen, Laconia.

14. SPECIAL ENEMIES OF WHITE PINE

Carroll County

Pales weevil damage can be found around the edge of new cuttings for a year or two after operating. The damage is insignificant in Carroll County.

Wolfeboro. Basford Lot. Mound building ants have killed small pines within a radius of 20 feet of the ant hill. Trees are stung near the ground and the result resembles blister rust in that there is a marked constriction. Other places in Wolfeboro and in some other towns have areas where the ant damage is considerable.

Gypsy moths were more numerous last year than for many years in Carroll County. The damage done to white pines, however, is not severe. If there should happen to be another defoliation this year the damage might be more marked. There were heavy infestations at Bald Hill, Albany, Jackman Ridge, Madison, Red Hill, Moultonboro and on the southwestern slope of the Ossipee mountains.

Wolfeboro. White pine weevil damage is severe in the Libby plantation here. There is so much pure white pine with no hardwood shelter that some of the young trees are killed back to the ground when they are about two feet high. They do great damage to plantations in open pastures with no protection. Plenty of examples around the county.

In the spring of 1926, scattering large white pines near Chocorua Lake died from top down about ten feet. They were generally in exposed sites. It was diagnosed as winter injury, the trees during a warm spell in February thawed out at their tops and were frozen by a sudden cold wave. The tops died but the injury did not continue down the trunk. They were conspicuous the first year but after the needles fell they were not noticeable.

The above is not an enemy but a condition which some of the other agents might be called upon to diagnose. I was called because it was thought to be blister rust.

See S. H. Boomer, North Conway.

14. SPECIAL ENEMIES OF WHITE PINEGrafton County

In this district I have not noticed any outstanding damage to the pine by any of the following, needle blight, shoe string fungus, white pine weevil, ants, gypsy moth. I have seen two cases of shoe string fungus but the area has been cut and no new infections. There is more or less weevil work on some of the plantations but nothing outstanding. A few cases where ants have killed a few trees only.

See G. F. Richardson, Lebanon.

I have only noticed three or four cases of damage done by needle blight and these were not serious. On occasions I have seen some damage done by white pine weevil but not to be compared with the injury this enemy is causing in the southern part of the State. Gypsy moth damage is very rare as the cold weather in this section seems to kill them off. Ants seem to predominate in our district and we see more of this injury than anything else, next to blister rust.

Kane,
See T. L. Woodsville.

Rockingham County

Palms weevil and ants are general. Shoe string fungus (*Armillaria mellea*) or Solby lot in Danville - generally distributed.

See L. C. Swain, Exeter.

Strafford County

Palms weevil doing much damage in cut over lots. White pine weevil has done extensive damage in older plantations but recent plantations seem to be comparatively free.

See W. J. Cullen, Rochester.

15. DISEASES ON CONIFERS OTHER THAN WHITE PINE.Carroll County

Freedom. Cunningham Lot. *Cronartium comptoniae*, found on Scotch pine in a plantation. Infection found in spring of 1927. Blisters found on the stem and branches of the small trees averaging three feet in height.

Wakefield. Rust found on pitch pine. Rust also found in Wakefield on the needles of pitch pine.

Woodman. In the town of Wakefield. Rust found on the pitch pine.

See S. H. Boomer, North Conway.

15. DISEASES ON CONIFERS OTHER THAN WHITE PINE.Grafton County

Nothing to Report.

See G. F. Richardson, Lebanon.

I have seen some damage done to Scotch pine by Chianospis pinifoliae but not to any great extent.

The spruce bud-worm has caused some damage in the northern part of Coos County. This report was given to me by lumber men in that section but I have only seen two instances of it in North Grafton.

See Thomas L. Kane, Woodsville.

16. OTHER SPECIAL FORESTRY FEATURESCarroll County

Western Maine Forest Nursery with a part of its nursery in New Hampshire is building up a successful business. Mr. T. Clifford Eastman is the manager and several million trees for forest planting are raised each year.

See S. H. Boomer, North Conway.

Grafton County

Hanover. Mr. Parker, Mgr. Hanover Water Works, interested from standpoint of planting.

Holderness. O. M. Pratt. Very interested in forestry and large owner who has practiced forestry methods.

Lyme. Geo. W. Barnes. Interested in forestry, prunes and thins. Has set out pine.

Lebanon. C. V. Tomkinson. Mgr. of Excelsor Mill and very interested in forestry. Set out a number of pine and tried out other species from seed.

Lebanon. C. E. Clough. Large lumberman and dealer of lumber.

Hillsborough County

Merrimack. Chas. F. Young farm. Planting of white pine, red pine, Scotch pine. Planting done 1910-1920. Inquire direction at Reed's Ferry store.

Merrimack County

Hopkinton. Suggest study of properties of E. C. Gerrish.

Webster; Francis Johnson, Sutton; Geo. B. Lake, Suncook; Raymond J. Barnard, Hopkinton. As examples of fine forestry practice (general).

See T. J. King, Concord.

Sullivan County

Meriden. C. A. Tracy. (Plainfield) interested and has set out some pine is starting to prune and thin on one lot.

See G. F. Richardson, Lebanon.

NEW HAMPSHIRE

-30-

FOR ADDITIONAL DATA

NEW HAMPSHIRE

-31-

FOR ADDITIONAL DATA

